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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/372,531	08/11/1999	WERNER BOHNSTEDT	534P007	1518

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EXAMINER

DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 01/02/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/372,531

Applicant(s)
Bohnstedt

Examiner
Tracy Dove

Art Unit
1745



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oct 11, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-15 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

This Office Action is in response to the communication filed on 10/11/02. Applicant's arguments have been considered, but are moot in view of the new grounds of rejection. Claims 1-9 and 11-15 are rejected in view of the prior art. This Action is Non-Final.

Continued Prosecution Application

The request filed on 10/11/02 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 15 recites "8 to 100 vol.% synthetic resin", which is not supported by the specification as filed. The specification discloses on page 4 "8 to 100 vol.% of polyolefin".

✓ The specification does not teach this volume percent for all synthetic resin materials.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites "said separator further comprising at least one separate rib which is applied to the electrode plate". It is unclear how the separator can "comprise" the rib if it is applied to the electrode plate. For the purposes of this Action, the claim will be examined as if the claim stated "said separator further comprising at least one separate rib which is applied to the separator sheet and located in the center area of the sheet".

*over
claim 13* Claim 9 further recites "A rolled-up battery separator", which is "cut into pieces for insertion in said battery". The specification does not appear to support a separator that is both "rolled-up" and "cut into pieces". Page 10 recites the "separator is cut into the width needed for pocket production and then rolled up. These rolls are sold and delivered to the battery manufacturer who cuts the rolled material into pieces for pocket production". It appears the separator is only "rolled-up" during shipping of the separator material, not when the separator is used for a storage battery. Note if the separator is cut into pieces while rolled-up, it is unclear how the pocket is produced.

To the extent the claims are understood in view of the 35 U.S.C. 112 rejections above, note the following prior art rejections.

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Also note the limitation “for a lead-acid storage battery” of claims 1, 9 and 15 is considered an intended use limitation and thus is not given patentable weight. It is important to note that all pending claims recite “A pocket separator” or “A rolled-up separator” with the exception of claim 14.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 7 and 11-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakano et al, EP 0541124 A2.

Nakano teaches a pocket type separator for a lead acid battery (col. 5, line 1). The pocket separator is made of a synthetic resin such as polyethylene or polyvinyl chloride. Polyethylene or polyvinyl chloride may be used alone (100% of the separator). A belt-like porous sheet is obtained and the sheet is cut into a number of pieces of a predetermined length and in a rectangular shape, as shown in Fig. 3. See col. 3, lines 31-41. The pocket type separator has a plurality of parallel, vertical, projecting ribs 5 [at least one elongated rib of instant claims] provided on the middle region of the inner facing surfaces of the separator. The left and right

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side end portions of the separator have short, intersectant ribs 6 [studs of instant claims] that intersect both side edges of an electrode plate which is contained in the pocket type separator (col. 4, lines 2-20). This arrangement enables the battery to keep the electrode plate in good contact with the electrolyte, *at all times*, and provide consistently satisfactory performance of the battery (col. 6, lines 44-49). Note Figs. 3 and 4 that show ribs 5 are continuous.

Note the specification states on page 6 that "the studs may have any suitable shape".

Thus the claims are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 102(b)/103(a) as being anticipated by and, alternatively, unpatentable over Nakano et al, EP 0541124 A2.

See discussion of Nakano above. Thus the claims are anticipated.

In the alternative, while Nakano does not explicitly state the separate rib is applied to the separator sheet (versus being integrally formed with the sheet), the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made

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because the courts have ruled that product-by-process limitations, in the absence of unexpected results, are obvious. Thus, whether the separator ribs are formed integrally with the separator sheet or the ribs are applied after the sheet is formed, the products, as an end result, are the same.

In re Fessman.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al, EP 0541124 A2 in view of Young et al., 5,665,488.

See discussion of Nakano above.

Nakano does not explicitly state the ribs are formed of a different material than the separator sheet.

However, Young teaches a separator for a lead acid battery comprising a sheet of a microporous polyolefin material and a rib core forming material. The rib core material is selected from the group consisting of thermoplastics, thermosetting polymers and reactive hot melts. See abstract. The Example in column 6 teaches a polyethylene sheet separator with a rib core material of a hot melt adhesive (Bostik 6363).

Thus the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because Young teaches that the method of applying ribs to a microporous polyolefin separator minimizes lost manufacturing time and scrap generation (see col. 1, lines 58-63). Thus, one of skill would be motivated to provide ribs of a different material of Young for the separator of Nakano because lost manufacturing time would

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be minimized and there would be less scrap generation. Furthermore, Young teaches that the rib core material may be different from the separator sheet material or it may have the same composition as the microporous polyolefin sheet (see col. 5, lines 55-62). Both Young and Nakano teach separators for lead acid batteries.

Claims 1-7, 9 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knauer, US 5,558,952 in view of Grimes et al., US 4,396,689.

Knauer teaches a pocket separator for retaining positive or negative electrode plates in an electric storage battery. The pocket separator is formed of a porous sheet that has a plurality of continuous vertical ribs, a plurality of broken inclined ribs at the side edges, and a plurality of broken vertical ribs in the center which engage the positive or negative plate in the pocket. The porous sheet material has a plurality of differently configured ribs on its inner surfaces. See col. 1, lines 49-64. The separator sheet is constructed of a synthetic resin such as polyethylene or other suitable material which is compatible with the battery environment where it is to be used (col. 2, lines 43-46). The pocket separator may be used in a lead acid electric storage battery (col. 3, line 28-col. 4, line 3).

Knauer does not explicitly state that the pocket separator has a plurality of studs on at least one side of the separator and at least one elongated vertical rib in a center area of the at least one side.

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However, Grimes teaches an electrochemical cell having a separator-spacer sheet comprising a microporous mid-portion with a plurality of projections. The projections may be pebble shaped, rod shaped or a combination of pebble-shaped and rod-shaped. See col. 5, lines 1-25. Grimes teaches in col. 2, lines 7-10 the separator-spacer is useful in the manufacture, construction and assembly of many different kinds of electrochemical cells, and should not be limited to a specific system. Figure 7c of Grimes shows a separator with a plurality of studs on at least one side and at least one elongated vertical rib in a center area of the at least one side. Figure 7c discloses the inventive separator shown in Fig. 1 of the instant specification.

Therefore, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because Grimes teaches that a separator may have many different types of projections on a separator sheet. The projections may be in the form of pebbles, rods or a combination of both. One of skill would be motivated to use the configuration shown in Fig. 7c for the separator of Knauer because Grimes teaches projections such as pebbles, rods or a combination of both are known in the art. Furthermore, Grimes teaches the discontinuous rod configuration of Knauer in Fig. 7b. Thus, Grimes teaches both Fig. 7b and 7c are known separator configurations. Furthermore, Grimes teaches the projections allow for an expeditious flow of electrolyte. The electrolyte flows without entrapping gas bubbles about the projections. Thus, one of skill would be further motivated to use the projection configuration of Grimes for the separator of Knauer in order to improve electrolyte flow.

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While neither Nakano nor Grimes explicitly state a separate rib is applied to the separator sheet (versus being integrally formed with the sheet), the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because the courts have ruled that product-by-process limitations, in the absence of unexpected results, are obvious. Thus, whether the separator ribs are formed integrally with the separator sheet or the ribs are applied after the sheet is formed, the products, as an end result, are the same. In re Fessman.

Response to Arguments


Applicant's arguments with respect to claims 1-9 and 11-15 have been considered but are moot in view of the new ground(s) of rejection.

The 35 U.S.C. 103(a) rejection in view of Willman has been withdrawn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached Monday-Thursday (9:00 AM-7:30 PM). My supervisor is Pat Ryan, who can be reached at (703) 308-2383. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax numbers are 703-872-9310 (after non-final) and 703-872-9311 (after final).

December 23, 2002


CAROL CHANEY
PRIMARY EXAMINER